

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Canceled).
2. (Currently Amended) A method for delivering a closure element to seal an opening through tissue, the closure element being carried on a carrier assembly slidably disposed on a proximal end of an elongate member such that a proximal end of the closure element is spaced apart from an outer surface of the elongate member, the method comprising:

inserting a distal end of the elongate member into an opening through tissue, the elongate member having a distal end and a proximal end and a skin overlying at least a portion of the outer surface of the elongate member between the distal end and proximal end and at least partially overlying the carrier assembly, the skin being bonded to the outer surface of the elongate member by an adhesive, the adhesive having sufficient adhesive strength such that the skin is peeled away from the outer surface as the carrier assembly is advanced towards the distal end;

advancing the carrier assembly distally along the elongate member from the proximal end towards the distal end of the elongate member, thereby advancing the closure element towards the distal end of the elongate member and causing the skin to separate from the outer surface of the elongate member;

engaging tissue adjacent the distal end of the elongate member with a plurality of tissue engaging elements on the closure element; and

withdrawing the elongate member from the opening, thereby leaving the closure element to close the opening.

3. (Original) The method of claim 2, wherein the skin comprises a weakened region extending towards the distal end of the elongate member, the weakened region tearing as the carrier assembly is advanced towards the distal end of the elongate member.

4. (Original) The method of claim 2, wherein the skin comprises a flap extending generally axially along the outer surface of the elongate member and overlying an adjacent region of the skin, and wherein the flap is released from the adjacent region as the carrier assembly is advanced towards the distal end of the elongate member, thereby allowing the skin to separate from the outer surface.
5. (Original) The method of claim 2, wherein the skin expands to a cross-section that is larger than a cross-section of the elongate member as the carrier assembly is advanced towards the distal end.
6. (Canceled).
7. (Previously Presented) The method of claim 2, wherein the skin comprises a skin outer surface that is substantially slippery.
8. (Original) The method of claim 2, wherein the opening through tissue extends through one or more layers of fascia, and wherein the skin facilitates advancing the closure element through the one or more layers of fascia.
9. (Previously Presented) The method of claim 2, wherein the opening through tissue communicates with a blood vessel, and wherein leaving the closure element to close the opening comprises leaving the closure element to substantially seal the opening from blood flow therethrough with the closure element.
10. (Original) The method of claim 9, wherein the elongate member comprises a lumen extending between the proximal and distal ends, and wherein the method further comprises inserting one or more instruments through the lumen into the blood vessel.
- 11-13. (Canceled).

14. (Previously Presented) The method of claim 2, further comprising inserting a distal end of an actuator member between the proximal end of the closure element and the outer surface of the elongate member until the distal end of the actuator member is coupled with the closure element and advancing the actuator member in a distal direction to advance the carrier assembly along the elongate member.

15. (Previously Presented) The method of claim 14, further comprising manipulating the actuator member to deploy the closure element and engage the tissue adjacent the distal end of the elongate member.

16. (Previously Presented) The method of claim 2, wherein engaging tissue adjacent the distal end of the elongate member with tissue engaging elements on the closure element comprises deploying the closure element from the carrier assembly and elongate member, the closure element comprising a generally annularly-shaped body comprising proximal and distal ends and a plurality of tissue engaging portions extending from the distal end, the closure element being configured to move from a first expanded configuration when on the carrier assembly to a second contracted configuration when deployed, thereby drawing tissue around the opening together.

17. (Canceled).

18. (Canceled).

19. (Canceled).

20. (New) A method for delivering a closure element to seal an opening through tissue, the closure element being carried on a carrier assembly slidably disposed on a proximal end of an elongate member such that a proximal end of the closure element is spaced apart from an outer surface of the elongate member, the method comprising:

inserting a distal end of the elongate member into an opening through tissue, the elongate member having a distal end and a proximal end and a skin overlying at least a portion of the outer surface of the elongate member between the distal end and proximal end and at least partially overlying the carrier assembly;

inserting a distal end of an obturator disposed within the elongate member through the opening through tissue;

advancing the carrier assembly distally along the elongate member from the proximal end towards the distal end of the elongate member, thereby advancing the closure element towards the distal end of the elongate member and causing the skin to separate from the outer surface of the elongate member;

engaging tissue adjacent the distal end of the elongate member with a plurality of tissue engaging elements on the closure element; and

withdrawing the elongate member from the opening, thereby leaving the closure element to close the opening.

21. (New) The method of claim 20, wherein engaging tissue adjacent the distal end of the elongate member with tissue engaging elements on the closure element comprises deploying the closure element from the carrier assembly and elongate member, the closure element comprising a generally annularly-shaped body comprising proximal and distal ends and a plurality of tissue engaging portions extending from the distal end, the closure element being configured to move from a first expanded configuration when on the carrier assembly to a second contracted configuration when deployed, thereby drawing tissue around the opening together.

22. (New) The method of claim 20, wherein the obturator comprises an expandable distal portion coupled with an elongate portion extending proximally for manipulation by a user.

23. (New) The method of claim 22, further comprising retracting the elongate portion of the obturator in a proximal direction to expand the expandable distal portion distal of the opening through tissue to stabilize or secure tissue surrounding the opening.
24. (New) The method of claim 20, wherein the skin comprises a weakened region extending towards the distal end of the elongate member, the weakened region preferentially splitting as the carrier assembly is advanced towards the distal end of the elongate member.
25. (New) The method of claim 24, wherein the weakened region comprises a thin-walled seam or a plurality of perforations to define a seam.
26. (New) The method of claim 20, wherein the skin comprises embedded fibers to bias the skin to preferentially tear.
27. (New) The method of claim 20, further comprising inserting a distal end of an actuator member between the proximal end of the closure element and the outer surface of the elongate member until the distal end of the actuator member is coupled with the closure element and advancing the actuator member in a distal direction to advance the carrier assembly along the elongate member.
28. (New) The method of claim 27, further comprising manipulating the actuator member to deploy the closure element and engage the tissue adjacent the distal end of the elongate member.

29. (New) A method for delivering a closure element to seal an opening through tissue, the closure element being carried on a carrier assembly slidably disposed on a proximal end of an elongate member such that a proximal end of the closure element is spaced apart from an outer surface of the elongate member, the method comprising:

inserting a distal end of the elongate member into an opening through tissue, the opening communicating with a blood vessel, the elongate member having a distal end, a proximal end, a lumen extending between the proximal and distal ends, and a skin overlying at least a portion of the outer surface of the elongate member between the distal end and proximal end and at least partially overlying the carrier assembly;

inserting one or more instruments through the lumen into the blood vessel;

advancing the carrier assembly distally along the elongate member from the proximal end towards the distal end of the elongate member, thereby advancing the closure element towards the distal end of the elongate member and causing the skin to separate from the outer surface of the elongate member;

engaging tissue adjacent the distal end of the elongate member with a plurality of tissue engaging elements on the closure element; and

withdrawing the elongate member from the opening, thereby leaving the closure element to close the opening and to substantially seal the opening from blood flow therethrough with the closure element.

30. (New) The method of claim 29, wherein engaging tissue adjacent the distal end of the elongate member with tissue engaging elements on the closure element comprises deploying the closure element from the carrier assembly and elongate member, the closure element comprising a generally annularly-shaped body and a plurality of tissue engaging portions extending from the generally annularly-shaped body, the closure element being configured to move from a first expanded configuration when on the carrier assembly to a second contracted configuration when deployed, thereby drawing tissue around the opening together.

31. (New) The method of claim 29, wherein the skin comprises a preferential splitting region extending towards the distal end of the elongate member, the preferential splitting region splitting as the carrier assembly is advanced towards the distal end of the elongate member.

32. (New) The method of claim 29, wherein the skin comprises a flap extending generally axially along the outer surface of the elongate member and overlying an adjacent region of the skin, and wherein the flap is released from the adjacent region as the carrier assembly is advanced towards the distal end of the elongate member, thereby allowing the skin to separate from the outer surface.
33. (New) The method of claim 29, wherein the skin expands to a cross-section that is larger than a cross-section of the elongate member as the carrier assembly is advanced towards the distal end.
34. (New) The method of claim 29, wherein the skin is bonded to the outer surface of the elongate member by an adhesive bond or a thermal bond, and wherein the bond has sufficient strength such that the skin is peeled away from the outer surface as the carrier assembly is advanced towards the distal end.
35. (New) The method of claim 29, wherein the skin comprises a skin outer surface that is substantially slippery.
36. (New) The method of claim 29, wherein leaving the closure element to substantially seal the opening from blood flow therethrough with the closure element.
37. (New) The method of claim 29, further comprising inserting a distal end of an obturator disposed within the elongate member through the opening through tissue.
38. (New) The method of claim 37, wherein the obturator comprises an expandable distal portion coupled with an elongate portion extending proximally for manipulation by a user.
39. (New) The method of claim 38, further comprising retracting the elongate portion of the obturator in a proximal direction to expand the expandable distal portion distal of the opening through tissue to stabilize or secure tissue surrounding the opening.